

Application No. 09/890,695

Filed: August 3, 2001

TC Art Unit: 1754

Confirmation No.: 6216

REMARKS

Claims 1-16 are pending in the application. The Examiner has rejected claims 1-16 under 35 U.S.C. § 103. Applicants have amended claim 1 and canceled claims 2, 10, 11 and 13-16. The amendment has support within the specification such that new matter has not been presented. Applicants submit that claims 1, 3-9 and 12 should be pending on entry of the amendments herein.

Any amendments to the claims should not be construed as acquiescence to any of the rejections by the Examiner and were provided solely to expedite the prosecution of the application. Applicants reserve the right to pursue the claims as originally filed in the present or a separate application(s).

Applicants also request reconsideration and withdrawal of the rejections by the Examiner in view of the remarks herein.

Claim Rejections 35 U.S.C. § 103

The Examiner has rejected claims 1-16 under 35 U.S.C. § 103 as obvious based on U.S. Patent No. 4,543,241 to Yoshinari et al. in view of several other references. Applicants underscore that Yoshinari et al. does not teach a first mean speed rate of temperature rise lying in the range of 10°C to 60°C per minute as required by claim 1. In fact, Yoshinari et al. are *entirely* silent about the mean speed for a first temperature zone. The Examiner has contended that to a person of ordinary skill within the art such a mean speed range would have been obvious. Applicants indicate, however, that the mean speed range of claim 1 is *essential* to impose early shrinkage of the weft yarn so that it adapts to the configuration of the warp yarn. Page 13 at line 12.

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Yoshinari et al. primarily disclose carbonization of individual fiber strands comprising thousands of filaments. Column 3 at line 30. Such individual fiber strands do not experience the problem of differential **shrinkage** as with latitudinal and longitudinal yarns of a weft and warp woven fabric. Yoshinari et al. also mention fiber strands that could be in the form of a fabric or **nonwoven** cloth, yet the reference is silent about woven weft and warp yarns. Applicants also underscore that a nonwoven cloth is in opposite to the structure of a **woven** cloth. As a result, Yoshinari et al. are unmotivated to use the claimed mean speed range of 10°C to 60°C per minute or to even consider employing such a range during carbonization. Applicants further submit that claim 1 has been amended to require that the cellulose fiber fabric have warp and weft **yarns**.

The patent courts have generally held that an applicant(s) would have to show that a claim range not mentioned by the prior art was **critical** in order to overcome an obviousness rejection. Should a claim range be disclosed by the prior art, unlike the present case, a prima facie basis for obviousness is established. The prima facie basis may be countered by showing that (1) the claimed invention exhibits some superior property or **advantage** or (2) the prior art has taught **away** from the invention. As indicated, the mean speed range of 10°C to 60°C per minute is a significant **advantage** over the prior art as the range overcomes the problems associated with weft yarn shrinkage such as shrinkage that does not occur early on in the carbonization process. Page 3 at line 22. Yoshinari et al. also teach **away** from solving these problems by requiring the temperature within the heating chamber to **gradually** increase. Column 4 at line 34.

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By contrast, the mean speed ranges of claim 1 ensure that heating within the carbonization chamber is not gradual. Figure 3 shows that a typical temperature profile in the carbonization chamber is generally *stepped*. Indeed, the initial chamber stage experiences a relatively fast temperature rise under a mean speed range of 10°C to 60°C per minute. Page 13 at line 23. The specification provides that by imposing a fast temperature rise on the fabric as it enters the initial chamber, the weft yarn can follow the shrinkage of the fabric and *avoid* any sort of fabric defects. Page 13 at line 19. Yoshinari et al. do not provide any mention or suggestion regarding weft yarn shrinkage so as to teach a person of ordinary skill within the art how to prevent such fabric defects.

A first mean speed range of 10°C to 60°C per minute would also not merely have been a matter of optimization in view of Yoshinari et al. as the reference is *silent* about the problems related to weft yarn shrinkage. As noted, Yoshinari et al. plainly teach away from any sort of optimization to solve these problems by expressly requiring a *gradual* temperature increase within a heating chamber such that weft yarn shrinkage would not be imposed early during carbonization. Column 6 at line 62. The other references cited by the Examiner do not overcome the deficiencies of Yoshinari et al. and the complete *lack* of teaching by the reference with regard to employing a first mean speed range of 10°C to 60°C per minute in order to impose weft yarn shrinkage.

In summary, Yoshinari et al. do not mention a mean speed range for an initial chamber stage. Applicants have also demonstrated that a first mean speed range of 10°C to 60°C per minute is *required* so as to impose early shrinkage of the weft yarn. The specification clearly identifies the problems related to weft yarn

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shrinkage within the art and underscores that the claimed first mean speed range helps to solve these problems. Yoshinari et al. are also silent with regard to imposing weft yarn shrinkage. The *gradually* increasing temperature profile taught by the reference would also likely cause significant fabric defects due to weft yarn shrinkage occurring later in the carbonization process. Thus, Applicants submit that each of the obviousness rejections by the Examiner have been overcome and should be withdrawn.

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CONCLUSION

Based on the remarks presented herein, reconsideration and withdrawal of the rejections by the Examiner and allowance of the application with all pending claims are respectfully requested.

The Examiner is also encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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